

CLAIMS

1. A laminate having a layer structure that a
carboxyl group-containing polymer layer (A) and a
5 polyvalent metal compound-containing layer (B) are arranged
adjacently to each other on at least one side of a
polymeric base, wherein the polyvalent metal compound-
containing layer (B) contains particles of a polyvalent
metal compound, a binder resin and a surfactant.
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2. The laminate according to claim 1, wherein the
carboxyl group-containing polymer layer (A) is ionically
crosslinked by a polyvalent metal ion migrated from the
polyvalent metal compound-containing layer (B).
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3. The laminate according to claim 1, wherein a
multi-layer film having a layer structure that the carboxyl
group-containing polymer layer (A)/the polyvalent metal
compound-containing layer (B), the polyvalent metal
20 compound-containing layer (B)/the carboxyl group-containing
polymer layer (A)/the polyvalent metal compound-containing
layer (B), or the carboxyl group-containing polymer layer
(A)/the polyvalent metal compound-containing layer (B)/the
carboxyl group-containing polymer layer (A) are arranged in
25 this order is arranged on at least one side of the
polymeric base.

4. The laminate according to claim 1, wherein at least one another resin layer is further arranged on at least one side of the polymeric base in addition to the multi-layer film having the layer structure.

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5. The laminate according to claim 1, wherein the polymeric base is a plastic film, and the whole laminate is a multi-layer film.

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6. The laminate according to claim 1, wherein a proportion of the polyvalent metal compound particles to the carboxyl group-containing polymer is a proportion that a chemical equivalent of the total (Bt) of the polyvalent metal compound particles to the total (At) of the carboxyl group in the carboxyl group-containing polymer amounts to at least 0.6.

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7. The laminate according to claim 1, wherein the carboxyl group-containing polymer is a homopolymer of a carboxyl group-containing unsaturated monomer, a copolymer of carboxyl group-containing unsaturated monomers, a copolymer of a carboxyl group-containing unsaturated monomer and any other polymerizable monomer, a carboxyl group-containing polysaccharide or a mixture thereof.

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8. The laminate according to claim 1, wherein the carboxyl group-containing unsaturated monomer is at least

one α,β -monoethylenically unsaturated carboxylic acid selected from the group consisting of acrylic acid, methacrylic acid, crotonic acid, itaconic acid, maleic acid and fumaric acid.

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9. The laminate according to claim 1, wherein the polyvalent metal compound particles are particles having an average particle diameter of 10 nm to 10 μm .

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10. The laminate according to claim 1, wherein the polyvalent metal compound is an oxide, carbonate, organic acid salt or alkoxide of beryllium, magnesium, calcium, copper, cobalt, nickel, zinc, aluminum or zirconium.

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11. The laminate according to claim 1, wherein the polyvalent metal compound particles are particles of a divalent metal compound.

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12. The laminate according to claim 1, wherein the polyvalent metal compound-containing layer (B) contains the polyvalent metal compound particles and the binder resin in a proportion of 99:1 to 1:99 in terms of a weight ratio.

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13. The laminate according to claim 1, wherein the polyvalent metal compound-containing layer (B) contains the polyvalent metal compound particles and the surfactant in a proportion of 99.9:0.1 to 50:50 in terms of a mass ratio.

14. The laminate according to claim 1, wherein the thickness of the carboxyl group-containing polymer layer (A) is 0.001 μm to 1 mm, and the thickness of the
5 polyvalent metal compound-containing layer (B) is 0.001 μm to 1 mm.

15. The laminate according to claim 1, which is obtained by a process comprising forming at least one
10 carboxyl group-containing polymer layer (A) and at least one polyvalent metal compound-containing layer (B) adjacently to each other on the polymeric base by a coating method and then aging the formed layers under an atmosphere of a relative humidity of at least 20% and a temperature of
15 5°C to 200°C to cause the polyvalent metal compound to migrate from the polyvalent metal compound-containing layer (B) into the carboxyl group-containing polymer layer (A), thereby forming a polyvalent metal salt with the carboxyl group in the carboxyl group-containing polymer
20 layer.

16. A process for producing a laminate having a layer structure that a carboxyl group-containing polymer layer (A) and a polyvalent metal compound-containing layer
25 (B) are arranged adjacently to each other on at least one side of a polymeric base, the process comprising (1) Step 1 of applying a coating liquid comprising a carboxyl group-

containing polymer on to said at least one side of the polymeric base to dry it, thereby forming the carboxyl group-containing polymer layer (A) and (2) Step 2 of applying a coating liquid comprising particles of a polyvalent metal compound, a binder resin and a surfactant before or after Step 1 to dry it, thereby forming the polyvalent metal compound-containing layer (B).

17. The production process according to claim 16, wherein the layer structure is a layer structure that the carboxyl group-containing polymer layer (A)/the polyvalent metal compound-containing layer (B), the polyvalent metal compound-containing layer (B)/the carboxyl group-containing polymer layer (A)/the polyvalent metal compound-containing layer (B), or the carboxyl group-containing polymer layer (A)/the polyvalent metal compound-containing layer (B)/the carboxyl group-containing polymer layer (A) are arranged in this order.

18. The production process according to claim 16, wherein at least one another resin layer is further arranged in addition to the above layer structure.

19. The production process according to claim 16, wherein the coating liquid comprising the polyvalent metal compound particles, binder resin and surfactant is a coating liquid containing 0.05 to 50% by weight of the

polyvalent metal compound particles, 0.05 to 50% by weight of the binder resin and 0.0001 to 50% by weight of the surfactant.

- 5 20. The production process according to claim 16,
wherein the above Step 1 and Step 2 are successively
carried out necessary times to form at least one carboxyl
group-containing polymer layer (A) and at least one
polyvalent metal compound-containing layer (B) adjacently
10 to each other on at least one side of the polymeric base by
a coating method, thereby forming a laminate, and the
laminate is then aged under an atmosphere of a relative
humidity of at least 20% and a temperature of 5°C to 200°C
to cause the polyvalent metal compound to migrate from the
15 polyvalent metal compound-containing layer (B) into the
carboxyl group-containing polymer layer (A), thereby
forming a polyvalent metal salt with the carboxyl group in
the carboxyl group-containing polymer layer.